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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,056	07/25/2003	H. Randall Shriver	5866	4143

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David L. Hedden  
ASHLAND INC.  
P.O. Box 2219  
Columbus, OH 43216

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/628,056

Applicant(s)

SHRIVER ET AL.

Examiner

Katarzyna Wyrozebski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/25/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by WOODSON (US 6,604,567)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

The prior art of WOODSON discloses composition for foundry cores and molds comprising (claim 1):

20-70 pbw of epoxy resin

5-50 pbw of acrylic monomer

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1-20 pbw of alkyl silicate

effective amount of peroxide.

The epoxy resin of WOODSON is derived from bisphenol A, bisphenol F, epoxidized novolak and mixtures thereof (claim 2). The epoxy resin has epoxide equivalent of 165-200 (col. 3, lines 53-54).

Additional components of WOODSON include phenolic resin (claim 3) such as phenolic resole (col. 4, line 66). Preferred peroxide is cumene hydroperoxide (claim 7). The specification also discloses use of solvents such as esters of fatty acids in amount of 0-25 pbw (col. 4, lines 40-50).

According to further claims of WOODSON, the components are mixed and introduced to a pattern (claims 9 and 10) to prepare foundry shape (claim 11). Metal article is formed by pouring molten metal into the foundry shape, allowing metal to cool and solidify for form casted article (claims 12-15).

In the light of the above disclosure, the prior art of WOODSON anticipates claims rejected above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over KWASNIOK (DE 19,727,540) in view of TORBUS (US 6,465,542).

Example 4 of the prior art of KWASNIOK discloses composition comprising:

Epoxy resin in amount of 59.5 pbw

Acrylic monomer in amount of 25.5 pbw

Ester of fatty acid in amount of 15 pbw

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Silane in amount of 0.3 pbw, and

Cumene hydroperoxide in amount 10 pbw.

The composition of KWASNIOK is utilized to make foundry shapes such as cores and molds used in metal casting, wherein fatty acid ester is utilized as a solvent. Specification further enables one to utilize esters of fatty acids in amount of up to 30 pbw.

Epoxy utilized in KWASNIOK, which has been renamed to BAKELITE 164 has epoxide equivalent of 186 +/- 4 (see attached copy of the website). Specification of KWASNIOK further indicates that mixtures of binders can be utilized as well (page6). One of those binders can be phenolic resin in amount of 5-30 pbw of the total binder.

The difference between the prior art of KWASNIOK and the present invention is presence of alkyl silicate.

With respect to the above differences the prior art of TORBUS discloses composition for foundry which comprises alkyl silicate as a solvent. According to the specification, alkyl silicates can be utilized with other co-solvents (col. 4) such as monoesters of fatty acids. One example is rapeseed oil methyl ester. The amounts of such solvent can vary. Examples HA5 disclose use of 5 pbw of silicate.

It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Linder* 457 F.2d 506,509, 173 USPQ 356, 359 (CCPA 1972).

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize alkyl silicate as additional solvent and

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thereby obtain the claimed invention. Use of fatty acid ester in combination with 5 pbw of alkyl silicate would still provide solvent mixture applicable for use in foundry.

7. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over KWASNIOK (DE 19,727,450) in view of YOSHIDA (US 5,169,880).

The discussion of the disclosure of the prior art of KWASNIOK from paragraph 6 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of KWASNIOK is presence of alkyl silicate.

With respect to the above difference, the prior art of YOSHIDA discloses composition for making foundry shapes, which comprises phenolic resin, coupling agent and alkyl silicate. Silicate can be utilized in amount of 0.001-10 pbw (col. 2, line 30-31).

It is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. *In re Linder* 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972).

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize alkyl silicate as additional solvent and thereby obtain the claimed invention. Use of fatty acid ester in combination with 5 pbw of alkyl silicate would still provide solvent mixture applicable for use in foundry.

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8. Claims and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over KWASNIOK in view of either TORBUS or YOSHIDA as applied to claims 1-9 above, and further in view of ARCHIBALD (US 6,037,389).

The discussion of KWASNIOK and TORBUS or YOSHIDA from paragraph 6 or 7 respectively is incorporated here by reference.

The difference between the present invention and the disclosure of KWASNIOK and TORBUS or YOSHIDA is specific recitation of otherwise known metal casting process.

With respect to the above difference, the prior art of ARCHIBALD discloses epoxy containing composition for foundry that is utilized in aluminum type metal casting.

According to process of ARCHIBALD, once foundry shape is formed, molten metal is poured into the foundry shape and allowed to cool and solidify resulting in metal casting (claim 8).

The process of metal casting utilizing foundry shapes is well documented process as it is shown in the prior art applied.

In the light of the above argument, it would have been obvious to one having ordinary skill in the art at the time of the instant invention, that in order to make metal casting using foundry molds and cores one will have to melt such metal first.

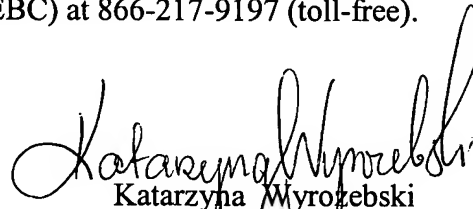
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Katarzyna Wyrozebski  
Primary Examiner  
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December 15, 2004

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**For Example:**

The standard epoxy resin:

**Ruetapox® 0164**will be renamed into **Bakelite® EPR 164**

Our standard hardener:

**Ruetadur® H 550**will be renamed into **Bakelite® EPH 550**

The new name of a product with a VE number that has been declared a standard product would then be:

**Ruetapox® VE 3318** will be renamed into **Bakelite® EPR 318**

Some VE-products are defined as standards from now on

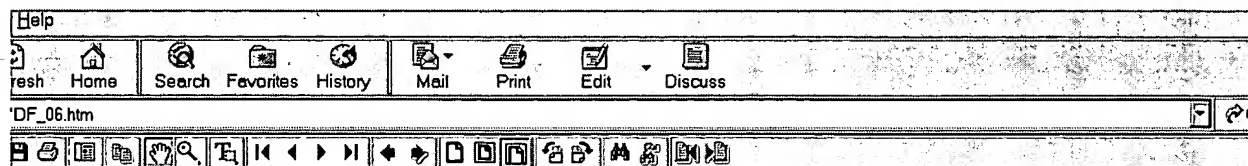
**Ruetapox® VE 4840/R**will be renamed into **Bakelite® EPR 217**

In this case, the product is classified by its chemical nature as a monofunctional aliphatic reactive diluent.

**1.1.1 Bisphenol F Epoxy Resins**  
**Bisphenol F Epoxidharze**

	<b>Bakelite®</b>	<b>EPR 158</b> (0158)	<b>EPR 150</b> (0171)	<b>EPR 151</b> (0151)	<b>EPR 161</b> (0161)
Property Eigenschaft	Unit Einheit				
Viscosity [25 °C] Viskosität	mPa · s	1200 ± 200	2400 ± 300	3850 ± 350	3850 ± 350
Epoxide equivalent Epoxid- äquivalent	g/equiv. g/Äquiv.	159 ± 1	166 ± 3	172 ± 3	172 ± 3
Hydrolyzable chlorine Chlorgehalt hydrolysierbar	%	< 0.3	< 0.3	< 0.05	< 0.3
Color Farbe	Gardner	≤ 1	≤ 3	≤ 3	≤ 3
Remarks Bemerkungen		Extremely low hydroxyl group content by distillation, high crys- tallization tendency Extrem geringer Gehalt an Hydro- xylgruppen durch Destil- lation, hohe Kristallisationsneigung	Very low viscosity, increased crystallization tendency Sehr niedrige Viskosität, höhere Kristallisations- neigung	Reduced crystallization tendency Verringerte Kristallisationsneigung	Standard  Standard

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### 1.1.2 Bisphenol A Epoxy Resins

#### Bisphenol A Epoxidharze

	Bakelite*	EPR 162 (0162)	EPR 154 (0164/LV)	EPR 172	EPR 164 (0164)	EPR 173 (LER 840)	EPR 174 (LER 850)	EPR 175 (LER 860)
Property Eigenschaft	Unit Einheit							
Viscosity [25 °C] Viskosität	mPa · s	4500 ± 500	8500 ± 1500	8500 ± 1500	10000 ± 2000	10000 ± 1000 <sup>5</sup>	13000 ± 2000 <sup>5</sup>	Semi solid
Epoxide equivalent Epoxid- äquivalent	g/equiv. g/Äquiv.	169 ± 2	180 ± 3	180 ± 3	186 ± 4	185 ± 5 <sup>1</sup>	189 ± 5 <sup>1</sup>	250 ± 20 <sup>1</sup>
Hydrolyzable chlorine Chlorgehalt hydrolysierbar	ppm	< 2000	< 500	< 200 <sup>2a</sup>	< 2000	< 500 <sup>3</sup>	< 500 <sup>3</sup>	-
Color Farbe	Gardner	≤ 1	≤ 2	≤ 2	≤ 2	≤ 1 <sup>11</sup>	≤ 1 <sup>11</sup>	≤ 1 <sup>11</sup>
Volatiles Flüchtige	%	< 0.2	< 0.2	< 0.2	< 0.3	< 0.3 <sup>4</sup>	< 0.2	-
Remarks Bemerkungen		Extremely low hydroxyl group content by distillation, high crystalli- zation ten- dency Extrem gerin- ger Gehalt an Hydroxyl- gruppen durch Destil- lation, hohe Kristallisa- tionsneigung	Low viscosity Niedrige Viskosität	Low viscosity low hydroly- zable chlorine Niedrige Viskosität, niedriger hydrolysier- barer Chlorgehalt	Standard Standard	Standard, low hydroly- zable chlorine Standard, niedriger hydrolysier- barer Chlorgehalt.	High viscosity Hohe Viskosität	Semi solid good adhesion Halbfest, gute Haftung